PROGRESS
OF
MEDICAL SCIENCE

MEDICINE

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Post Malarial Severe Anemia.—HARRINGTON and WHITELAW (*Glasgow Med. Jour.*, June, 1918, No. 51) state that shortly after their arrival in Macedonia they were impressed by the occurrence after malaria of cases of grave anemia, apparently of the pernicious type. It was found possible to examine 80 cases, involving 121 full blood counts and complete physical examinations. With the exception of a few Bulgar and German prisoners the patients were all Serbian soldiers. For the differential results, five hundred cells were counted. (I) *Severe Forms:* (1) Post-malarial anemia may assume a grave type characterized by all the signs and symptoms of pernicious anemia but without evidence of oral or intestinal sepsis. (2) The spleen is enlarged, sometimes considerably so, but the liver is seldom enlarged. (3) The blood shows marked diminution of red corpuscles, high color index, leukopenia with a relative increase of lymphocytes and to a lesser extent of large mononuclears, poikilocytosis, megalocytosis, polychromasia, occasional granular basophilia, the presence of megaloblasts and normoblasts, and a small percentage of myelocytes frequently, and myeloblasts constantly. (4) Such cases occur most frequently as a sequel of subtertian malaria, but may follow benign tertian. (5) Recovery usually follows prompt and energetic treatment, but death may occur, and the gravity of the prognosis increases with the age of the patient. (6) Treatment by arsenic used as in pernicious anemia, either as liquor arsenicalis in increasing doses, or galyl or kharsivan intravenously, usually leads to recovery. It should be combined with treatment by quinine, orally or intramuscularly as indicated. (II) *Mild Forms:* (1) The blood shows a less marked diminution of red corpuscles, a low color index except in a few more recent cases, a less marked leukopenia with a relative increase of lymphocytes, and large mononuclear cells, slight poikilocytosis, occasional megalocytes and polychromasia, rarely granular basophilia, the presence of normoblasts and rarely of megaloblasts, and a small percentage of myelocytes frequently, and of myeloblasts constantly. (2) The average age of the patients is lower. (3) Recovery is the rule.

The New Treatment for Paralysis Agitans.—SWIFT (*Boston Med. and Surg. Jour.*, November 21, 1918, No. 21, clxxix, 644) cites briefly the treatment of three typical cases of a method which consists solely in the muscular movements of a simple nature, gone through very slowly, at the rate of about one foot to the second, with strong mental concentration upon the movement while it is in progress. First come movements of the right foot, then of the left, then of the legs successively, then of the right and left arms in order, then of both arms, and finally of the hands and fingers. The object is not muscular development but rather development of nervous control over the muscles. The movements should be regular and they should be definitely prescribed, but it is not necessary to outline any special form for them in this place because they can easily be invented by anyone. No particular value need be attached to any special set of exercises, because the nervous control is the same in one as in another. It seems likely that the essence of the entire treatment lies in this slowness of movement, and perhaps also in the mental concentration which should accompany the movement. The purpose of these exercises is to develop just this feeling of pervading steadiness to such a pitch that it endures as a constant feature of the patient's physical life. By my own experience with them and by my observation of patients' use of them I am led to believe that these exercises do build up a central inhibitory control.

The Bacillus Influenzæ in Sinusitis and Meningitis.—LACY (*Jour. Lab. and Clin. Med.*, November, 1918, No. 2, iv, 55) reports case histories and postmortem pathological and bacteriological findings in two cases of influenzal meningitis in infants and the clinical and bacteriological findings in two cases of frontal sinusitis in young men. He concludes: In all cases of meningitis, either mild or severe, of indefinite etiology it is advisable to centrifuge the spinal fluid and culture it on various media, always using blood agar. Observations on this should be made for at least forty-eight hours before a negative report is made. The presence of Gram-negative bacilli in direct smears or on cultures from cerebrospinal fluid or from the accessory sinuses of the respiratory tract should be looked upon as probable Bacillus influenzæ. This is especially true when long filamentous forms are present. There are probably two types of B. influenzæ as suggested by the cases reported here: the one which retains its original short bacillary form indefinitely on artificial media and the other which readily develops filamentous forms after a few days on moist blood agar. Sinus infections with the B. influenzæ should have early and adequate drainage to prevent the danger of a complicating meningitis. *Note.*—Since the completion of the above work, Major H. E. Robertson, of the American Expeditionary Force in France, has reported the recovery of B. influenzæ from the accessory sinuses of 14 cases at autopsy: 7 times out of 8, cases of influenzal tracheobronchitis; 6 times from patients dead from other infectious diseases; and 2 from men dying of accidental causes. Major Robertson did not go into the cultural characteristics nor morphological differences of the bacillus.

A Study of the Neutralization Properties of Antipoliomyelitic Horse Serum.—Nuzum (*Jour. Infect. Dis.*, September, 1918, No. 3, xxiii) says that antipoliomyelitic horse serum prepared by repeated intravenous injections of the coccus isolated from the central nervous system in human and monkey poliomyelitis possesses neutralizing properties against the virus of poliomyelitis. Immune horse serum protected 11 monkeys perfectly against fatal doses of virus. In two monkeys in which both immune human serum and immune horse serum failed to neutralize the virus, a definite delay of sixteen days in the onset of paralysis must be attributed to the immune horse serum as compared with a shorter delay of eleven days with immune human serum known to possess much neutralizing principles. The neutralizing properties of antipoliomyelitic horse serum *in vitro* for the virus of poliomyelitis afford a convenient and satisfactory test of the potency of this serum for use in the treatment of poliomyelitis. Suitable controls with normal horse serum and comparisons with immune human serums known to possess neutralizing properties should be conducted simultaneously. Finally, the neutralizing, protective and curative properties of antipoliomyelitic horse serum for experimental poliomyelitis of monkeys are in direct accord with the favorable results observed in the serum treatment of human poliomyelitis and argue strongly for the etiological relationship of the coccus to this disease.

Report of Epidemic of "Spanish Influenza" Which Occurred at Camp A. A. Humphreys, Va., during September and October, 1918, by I. W. Brewer, M.D., Geneva, N. Y., Lieutenant-Colonel, M. C., N. A., Camp Surgeon, Camp A. A. Humphreys, Va.—(*Jour. Lab. and Clin. Med.*, December, 1918, No. 3, iv, 87). In a detailed analysis of the report of the so-called "Spanish Influenza," well illustrated by graphic charts, the author analyzes the statistics concerning incidence of the disease and its complications in the various regiments. He considers the distribution and time of occurrence of the cases, the relation of dust and weather to the spread of infection, the incidence among colored organization, and concludes that (1) the incidence of the disease increases with the density of population in barracks. (2) That the hanging of a sheet between the individual beds in the barracks was of value in preventing infection. (3) That the negro race suffered much less from the disease than did the white. (4) That there were more cases complicated with pneumonia among the colored troops and that the disease was more fatal among them.

The Clinical Pathology of Mustard Gas (Dichlorethylsulphide) Poisoning, by George R. Herrmann, M. S., M.D., Ann Arbor, Michigan.—(*Jour. Lab. and Clin. Med.*, November, 1918, No. 2, iv, 1). This writer concludes: (1) that mild cases of mustard gas burns of the skin show no changes in the blood or urine. (2) Moderately severe and severe cases of mustard gas burns of the skin with some involvement of the upper respiratory tract show after the first week definite changes in urine, blood urea and blood. (3) The urinary changes consist in a diminution of the urinary output, increased concentration and acidity, albuminuria, and diminished urea and chloride output. In the sediment there may be found casts, renal epithelium, red blood cells and an increased number of leukocytes. Under forced fluids prompt improvement occurs. (4) Coincident with these urinary changes the blood urea is found to be high, but approaches normal with the improvement in the urinary condition when fluids are forced. (5) The blood shows a slight secondary anemia with a well-marked polymorphonuclear leukocytosis, a definite eosinophilia, and the appearance of myelocytes and young forms of leukocytes. The blood platelets were usually increased. No evidence of hemolysis was found. These changes indicate a disturbance in the white cell formation rather than in the red blood cell group. No leukopenia was noted at any time. The leukocytosis reached its height coincidently with the height of the secondary infection and fell with the improvement of the infection. (6) The temperature, pulse and respiration charts show in the severe cases an initial period of shock. With the development of the necrosis and the secondary infection there is a corresponding febrile reaction. (7) The bacteriological examination of the infected skin lesions and furuncles showed constantly the presence of Staphylococcus pyogenes aureus. In the one bronchial cast obtained streptococci were present. (8) We believe that the changes in the blood and urine may be interpreted as dependent upon the secondary infection and, in part, possibly, to the absorption of toxic products from the necrotic skin, rather than to any direct toxic action of mustard gas.

THERAPEUTICS

UNDER THE CHARGE OF

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An Experimental Investigation of the Cause of Early Death from Arsphenamine and of Certain Other Features of the Pharmacological Action of the Substance.—In the present series of experiments, Jackson and Smith (*Jour. Pharm. and Exp. Therap.*, 1918, xii, 221) have investigated the mechanism of acute death following the administration of arsphenamine. They studied especially the effects of various preparations of arsphenamine on the cardiovascular system with a view of discovering the cause of the acute reaction often seen in the clinic. They report that the slow injection of therapeutic quantities of arsphenamine in very dilute alkaline solution produces no striking results in anesthetized dogs. However, as the rate of injection and the concen-